

3082 25th Street, Port Arthur, Texas 77642 • (409) 983-4575 FAX (409) 982-1522 5544 Leopard Street, Corpus Christi, Texas 78408 • (361) 299-9900 FAX (361) 299-1155 138 S. Cities Service Hwy., Sulphur, Louisiana 70663 • (337) 626-2121 FAX (337) 626-2126

Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn: Mr. Dan Hoyt

Bureau of Air Quality Control

Phone: 832-393-5631; Fax: 713-640-4341 E-mail: Dan.hoyt@cityofhouston.net

Report Date: 04/07/10 Sample Matrix: Gas

Date Collected: 03/25/10 Time Collected: 4:06pm-5:06pm

Collected By: Youjun Qin Date Received: 04/05/10 Time Received: 5:10pm CHEMTEX FILE #: P10040113

### RESULTS OF ANALYSIS

PROJECT No: Canister 1662

PROJECT NAME: City of Houston DIAL
PROJECT LOCATION: Shell Deer Park

SAMPLE IDENTIFICATION: Southeast CR-3

CHEMTEX #: P10040113

Analyte	Result	Reporting Limit,	Flag	
	(ppb, v)	(RL) (ppb, V)	Flag	
Propylene	13.69	2.5		
Propane	81.19	2.5		
Freon 12	< 2.5	2.5		
Chloromethane	< 2.5	2.5		
Freon 114	< 2.5	2.5		
Isobutane	16.37	2.5		
Vinyl chloride	< 2.5	2.5		
1-Butene	< 2.5	2.5		
1,3-Butadiene	< 2.5	2.5		
Butane	22.98	2.5		
t-2-Butene	< 2.5	2.5		
Bromomethane	< 2.5	2.5		
c-2-Butene	< 2.5	2.5		
Chloroethane	< 2.5	2.5		
Acetone	< 2.5	2.5		
Isopentane	< 2.5	2.5	•••	
Freon 11	< 2.5	2.5		
Isopropyl Alcohol	< 2.5	2.5		
1-Pentene	< 2.5	2.5		
Pentane	< 2.5	2.5		
Isoprene	< 2.5	2.5		
t-2-Pentene	< 2.5	2.5		
c-2-Pentene	< 2.5	2.5		
1,1-Dichloroethene	< 2.5	2.5		
2-Methyl-2-butene	< 2.5	2.5		
Methylene Chloride	< 2.5	2.5	•	
Carbon disulfide	< 2.5	2.5		
Freon 11	< 2.5	2.5		
2,2-Dimethylbutane	< 2.5	2.5		
Cis-1,2-Dichloroehtane	< 2.5	2.5		
1,1-Dichloroethane	< 2.5	2.5		
Cyclopentane	< 2.5	2.5		
2,3-Dimethylbutane	< 2.5	2.5		
MTBE	< 2.5	2.5		
2-Methylpentane	< 2.5	2.5		
2-Butanone	< 2.5	2.5		
3-Methylpentane	< 2.5	2.5		

MOTICE/DISCLAIMER: The analytical results, opinions or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. No person or entity other than the client may rely on this report. Any such reliance will be unjustified, any person, other than the client, that reads this report does so at his or her own risk. The analytical results, opinions and/or interpretations expressed herein represent the best judgment of Chemtex, based on the information and instructions received from the client. Chemtex makes no versations representation, express or implied, of any type, and expressly disclaims same. This report shall not be reproduced, in whole or in part, without the written approval of Chemtex. In no event shall Chemtex be responsible for any damage greater than the amount that it received for the analysis performed.



Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn: Mr. Dan Hoyt

Bureau of Air Quality Control

Phone: 832-393-5631; Fax: 713-640-4341

E-mail: Dan.hoyt@cityofhouston.net

Report Date: 04/07/10

Sample Matrix: Gas

Date Collected: 03/25/10 Time Collected: 4:06pm-5:06pm

Collected By: Youjun Qin Date Received: 04/05/10 Time Received: 5:10pm

CHEMTEX FILE #: P10040113

### RESULTS OF ANALYSIS

PROJECT No: Canister 1662

PROJECT NAME: City of Houston DIAL
PROJECT LOCATION: Shell Deer Park

SAMPLE IDENTIFICATION: Southeast CR-3
CHEMTEX #: P10040113

Analyte	Result	Reporting	
	(ppb, v)	Limit,	Flag
		(RL) (ppb, V)	
1-Hexene	< 2.5	2.5	·
2-methyl-1-pentene	< 2.5	2.5	
trans-1,2-dichloroethene	< 2.5	2.5	
4-methyl-1-pentene	< 2.5	2.5	
Hexane	< 2.5	2.5	
Ethylacetate	< 2,5	2.5	
Chloroform	< 2.5	2.5	
TetrahydroFuran	< 2.5	2.5	
MethylCyclopentane	< 2.5	2.5	
2,4-Dimethylpentane	< 2.5	2.5	
1,1,1-Trichloroethane	< 2.5	2.5	
Benzene	< 2.5	2.5	
Carbontetrachloride	< 2.5	2.5	
Cyclohexane	< 2.5	2.5	
2-Methyl Hexane	< 2.5	2.5	
2,3-Dimethylpentene	< 2.5	2.5	
3-Methylhexane	< 2.5	2.5	
1,2-Dichloropropane	< 2.5	2.5	
Bromodichloromethane	< 2.5	2.5	
Trichloroethylene	< 2.5	2.5	
Isooctane	< 2.5	2.5	
Heptane	< 2.5	2.5	
1,3-Dichloro-1propene	< 2.5	2.5	
cis-1,3-Dichloropropene	< 2.5	2.5	
MIBK	< 2.5	2.5	
Methylcyclohexane	< 2.5	2.5	
trans-1,3-dichloropropane	< 2.5	2.5	
1,1,2-trichloroethane	< 2.5	2.5	
2,3,4-Trimethyl pentane	< 2.5	2.5	
Toluene	5.35	2.5	
2-methylheptane	< 2.5	2.5	
2-Hexanone	< 2.5	2.5	
Dibromochloromethane	< 2.5	2.5	
3-Methylheptane	< 2.5	2.5	
1,2-Dibromoethane	< 2.5	2.5	
Octane	< 2.5	2.5	
Tetrachloroetylene	< 2.5	2.5	

ROTICE/DISCLAIMER: The analytical results, opinions or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. No person or entity other than the client may rely on this report. Any such reliance will be unjustified. Any person, other than the client, that reads this report does so at his or her own risk. The analytical results, opinions and/or interpretations expressed herein represent the best judgment of Chemtex, based on the information and instructions received from the client. Chemtex makes no warranty or representation, express or implied, of any type, and expressly disclaims same. This report shall not be reproduced, in whole or in part, without the written approval of Chemtex. In no event shall Chemtex be responsible for any damage greater than the amount that it received for the analysis performed.



3082 25th Street, Port Arthur, Texas 77642 • (409) 983-4575 FAX (409) 982-1522 5544 Leopard Street, Corpus Christi, Texas 78408 • (361) 299-9900 FAX (361) 299-1155 138 S. Cities Service Hwy., Sulphur, Louisiana 70663 • (337) 626-2121 FAX (337) 626-2126

Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn: Mr. Dan Hoyt

Bureau of Air Quality Control

Phone: 832-393-5631; Fax: 713-640-4341

E-mail: Dan.hoyt@cityofhouston.net

Report Date: 04/07/10

Sample Matrix: Gas

Date Collected: 03/25/10

Time Collected: 4:06pm-5:06pm

Collected By: Youjun Qin Date Received: 04/05/10 Time Received: 5:10pm CHEMTEX FILE #: P10040113

### RESULTS OF ANALYSIS

PROJECT No: Canister 1662

PROJECT NAME: City of Houston DIAL
PROJECT LOCATION: Shell Deer Park

SAMPLE IDENTIFICATION: Southeast CR-3
CHEMTEX #: P10040113

Analyte	Result (ppb, v)	Reporting Limit, (RL) (ppb, V)	Flag	
Chlorobenzene	< 2.5	2.5		
Ethylbenzene	< 2.5	2.5		
m,p-Xylene	< 2.5	2.5		
Bromoform	< 2.5	2.5		
Styrene	< 2.5	2.5		
1,1,2,2-tetrachloroethane	< 2.5	2.5		
o-xylene	< 2.5	2.5		
Nonane	< 2.5	2.5		
Isopropylbenzene	4.10	2.5		
Propylbenzene	< 2.5	2.5		
m-Ethyltoluene	< 2.5	2.5		
p-Ethyltoluene	< 2.5	2.5		
1,3,5-trimethylbenzene	< 2.5	2.5		
o-Ethyltoluene	< 2.5	2.5		
1,2,4-trimethylbenzene	< 2.5	2.5		
Benzylchloride	< 2.5	2.5		
1,3-Dichlorobenzene	< 2.5	2.5		
Decane	< 2.5	2.5		
1,4-Dichlorobenzene	< 2.5	2.5		
1,2,3-Trimethylbenzene	< 2.5	2.5		
1,2-Dichlorobenzene	< 2.5	2.5		
m-Diethylbenzene	< 2.5	2.5	•	
p-Diethylbenzene	< 2.5	2.5		
Undecane	< 2.5	2.5		
1,2,4-Trichlorobenzene	< 2.5	2.5		
Dodecane	< 2.5	2.5		
Hexachlor1,3-butadiene	< 2.5	2.5		

MOTICE/DISCLAIMER: The analytical results, opinions or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. No person or entity other than the client may rely on this report. Any such reliance will be unjustified. Any person, other than the client, that reads this report does so at his or her own risk. The analytical results, opinions and/or interpretations expressed herein represent the best judgment of Chamtex, based on the information and instructions received from the client. Chamtex makes no warranty or representation, express or implied, of any type, and expressly disclaims same. This report shall not be reproduced, in whole or in part, without the written approval of Chamtex. In no event shall Chamtex be responsible for any damage greater than the amount that it received for the analysis performed.



Report Date: 04/07/10

Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn: Mr. Dan Hoyt

Bureau of Air Quality Control

Phone: 832-393-5631; Fax: 713-640-4341

E-mail: Dan.hoyt@cityofhouston.net CHEMTEX FILE #: P10040113

## QA/QC LABORATORY CONTROL SAMPLE (LCS) RECOVERIES QC BATCH ID: AT040510

Analyte	True value (ppb,v)	Obtained Value (ppb,v)	% Rec	Flag
Propylene	10.00	13.68	137	
Propane	10.00	12.24	122	
Isobutane	10.00	11.93	119	
1-Butene	10.00	12.61	126	
Butane	10.00	12.48	125	
t-2-Butene	10.00	12.70	127	
c-2-Butene	10.00	12.45	125	
Isopentane	10.00	10.79	108	
1-Pentene	10.00	11.50	115	
Pentane	10.00	12.07	121	
Isoprene	10.00	12.07	121	
t-2-Pentene	10.00	12.04	120	
c-2-Pentene	10.00	11.89	119	
2-Methyl-2-butene	10.00	11.89	119	
2,2-Dimethyl butane	10.00	11.74	117	
Cyclopentane	10.00	11.08	111	
3-Methylpentane	10.00	9.47	95	
1-Hexene	10.00	9.23	92	
2-methyl-1-pentene	10.00	9.02	90	
Hexane	10.00	10.19	102	
MethylCyclopentane	10.00	11.37	114	
2,4-Dimethylpentane	10.00	11.55	116	
Benzene	10.00	10.93	109	
Cyclohexane	10.00	11.06	111	
2-Methyl Hexane	10.00	8.68	87	
2,3-Dimethylpentane	10.00	8.76	88	
3-Methylhexane	10.00	8.69	87	
Heptane	10.00	8.11	81	
Methylcyclohexane	10.00	8.25	83	
2,3,4-Trimethyl pentane	10.00	8.46	85	
Toluene	10.00	7.96	80	
2-methylheptane	10.00	8.51	85	
3-Methylheptane	10.00	8.39	84	
Octane	10.00	7.70	77	

ROTICE/DISCLAIMER: The analytical results, opinions or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. No person or entity other than the client may rely on this report. Any such reliance will be unjustified. Any person, other than the client, that reads this report does so at his or her own risk. The analytical results, opinions and/or interpretations expressed herein represent the best judgment of Chemtex, based on the information and instructions received from the client. Chemtex makes no warranty or representation, express or implied, of any type, and expressly disclaims same. This report shall not be reproduced, in whole or in part, without the written approval of Chemtex. In no event shall Chemtex be responsible for any damage greater than the amount that it received for the analysis performed.



3082 25th Street, Port Arthur, Texas 77642 • (409) 983-4575 FAX (409) 982-1522 5544 Leopard Street, Corpus Christi, Texas 78408 • (361) 299-9900 FAX (361) 299-1155 138 S. Cities Service Hwy., Sulphur, Louisiana 70663 • (337) 626-2121 FAX (337) 626-2126

Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn:

Mr. Dan Hoyt

Bureau of Air Quality Control

Phone: 832-393-5631; Fax: 713-640-4341

E-mail: Dan.hoyt@cityofhouston.net

Report Date: 04/07/10

CHEMTEX FILE #: P10040113

## QA/QC LABORATORY CONTROL SAMPLE (LCS) RECOVERIES QC BATCH ID: AT040510

Analyte	True value (ppb,v)	Obtained Value (ppb,v)	% Rec	Flag
Ethylbenzene	10.00	7.94	79	
m,p-Xylene	20.00	15.86	159	
Styrene	10.00	8.36	84	
o-xylene	10.00	8.22	82	
Nonane	10.00	8.60	86	
Isopropylbenzene	10.00	8.82	88	
Propylbenzene	10.00	8.54	85	
m-Ethyltoluene	10.00	8.57	86	
p-Ethyltoluene	20.00	17.50	175	
1,3,5-trimethylbenzene	10.00	8.76	88	
o-Ethyltoluene	10.00	8.75	88	
1,2,4-Trimethylbenzene	10.00	8.74	87	
Decane	10.00	8.66	87	
1,2,3-Trimethylbenzene	10.00	8.38	84	
m-Diethylbenzene	10.00	8.24	82	
p-Diethylbenzene	10.00	8.08	81	
Undecane	10.00	7.73	77	



Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn:

Mr. Dan Hoyt

Bureau of Air Quality Control

Phone: 832-393-5631; Fax: 713-640-4341

E-mail: Dan.hoyt@cityofhouston.net

Report Date: 04/07/10

CHEMTEX FILE #: P10040113

## **FLAGS**

**RL**: Reporting Limit

J: Target analyte is between the MDL and RL values.

L: Target analyte recovered below the recovery limit.

H: Target analyte recovered above the recovery limit.

## METHOD REFERENCES/ANALYSIS DATES & ANALYSTS

Analytes VOAs Method

EPA Method TO-15

Date Analyzed/Analyst

04/05/10 KBR

Dr. C. N. Reddy, Ph.D., CIH, per Director

amd/kml\*/CNR

NOTICE/DISCLAIMER: The analytical results, opinions or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. No person or entity other than the client may rely on this report. Any such reliance will be unjustified. Any person, other than the client, that reads this report does so at his or her own risk. The analytical results, opinions and/or interpretations expressed herein represent the best judgment of Chemtex, based on the information and instructions received from the client. Chemtex makes no warranty or representation, express or implied, of any type, and expressly disclaims same. This report shall not be reproduced, in whole or in part, without the written approval of Chemtex. In no event shall Chemtex be responsible for any damage greater than the amount that it received for the analysis performed.

## CHEMTEY

# CHAIN OF CUSTODY RECORD

CHEMILA	CHAIN OF COSTOD'S RECORD	<b>a)</b> / .
	INDUSTRIAL HYGIENE	Chevole #
Environmental & Industrial Hygiene Services		•
3082 25th Street, Port Arthur, TX 77642	ANALYTICAL SERVICES REQUEST	_
Phone: (409) 983-4575, Fax: (409) 982-1522		P10040113
E-mail: chemtexpa@sbcglobal.net		01 922 202 5621

Bureau of Air Quality Control  Bureau of Air Quality Control  Gld different from above)  BILLING CONTACT/ADDRESS:    Check   Project No.:   Project Name:   Chry of Houston DiAL	Client: City of Houston Attn: Mr. Dan Hoyt,		· <u>-</u> ,	Addres		Park Place Bon, TX 770						Fax: 7	32-393-5631 13-640-4341	•
CHEMTEX #   Sample Identification   Sample   Project No.		lity Cont	rol							_			an.Hoyt@cityofho	uston.net
BILLING CONTACT/ADDRESS:    662   CANISTER   City of Houston Dial   Shew Deer Parks					Project N	o.:	Proj	ect Name:			Project L	ocation:		
CHEMTEX # Sample Identification Media Collected (min) Volume (iii) Requested Parameters    1662   SOUTHEAST CR-3   CANJISTER 3/25/10 \$	BILLING CONTACT/ADD	RESS:	166	2	CANIS	STER 2.	Cit	y of Ho	USTON 2	DIAL	SHE	U DE	ER PARH	د ا
Sample(s) Collected By:  YOUJUN QIN  Relinquished By:  Pathonics A 60571N  Date/Time:  Date/Time:  Date/Time:  Date/Time:  Date/Time:  Date/Time:  Date/Time:  Received for CHEMTEX By  Received for CHEMTEX By  Received Turnaround Time  24 hr Rush  A 8 hr Rush  A 9 h	СНЕМТЕХ#		Sam	nple Iden	ntification		:			Time	Volume		Requested Par	ameters
Sample(s) Collected By:  YOUJUN QIN  Emergency Rush 2-4 hr Rush 2-4 hr Rush 48 hr Rush 7-14 days  Relinquished By:  FRANCIS A 605TIN'  Date/Time:  Date/Time:  Received for CHEMTEX By	1662	SOUT	HEAST	CA	2-3			CANISTER	3/25/10	4:06 PM- 5:06 PM (60 MIN)	62	DILUT	ION FACTOR:	3.92
Sample(s) Collected By:  YOUTUN QIN  Relinquished By:  FRANCIS A GOSTINI  Relinquished By:  Date/Time:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Date/Time:  Date/Time:														
Sample(s) Collected By:  YOUTUN QIN  Relinquished By:  FRANCIS A GOSTINI  Relinquished By:  Date/Time:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Date/Time:  Date/Time:  Received for CHEMTEX By:  Date/Time:									<u></u>					<u>_</u>
Sample(s) Collected By:  YOUTUN QIN  Relinquished By:  FRANCIS A GOSTINI  Relinquished By:  Date/Time:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Date/Time:  Date/Time:  Received for CHEMTEX By:  Date/Time:			<del></del>								_			
Sample(s) Collected By:  YOUTUN QIN  Relinquished By:  FRANCIS A GOSTINI  Relinquished By:  Date/Time:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Date/Time:  Date/Time:  Received for CHEMTEX By:  Date/Time:									. <u>-</u> .	<u> </u>				
Sample(s) Collected By:  YOUTUN QIN  Relinquished By:  FRANCIS A GOSTINI  Relinquished By:  Date/Time:  Date/Time:  Date/Time:  Received for CHEMTEX By:  Received for CHEMTEX By:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Date/Time:  Date/Time:  Received for CHEMTEX By:  Date/Time:							-							
Sample(s) Collected By:  YOUTUN QIN  Relinquished By:  FRANCIS A GOSTINI  Relinquished By:  Date/Time:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Date/Time:  Date/Time:  Received for CHEMTEX By:  Date/Time:						·								
Sample(s) Collected By:  YOUTUN QIN  Relinquished By:  FRANCIS A GOSTINI  Relinquished By:  Date/Time:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Date/Time:  Date/Time:  Received for CHEMTEX By:  Date/Time:				. <u>.</u> ,										
Sample(s) Collected By:  YOUTUN QIN  Relinquished By:  FRANCIS A GOSTINI  Relinquished By:  Date/Time:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Date/Time:  Date/Time:		-		<u></u>		-	. <u>.</u>							
Sample(s) Collected By:  YOUTUN QIN  Relinquished By:  FRANCIS A GOSTINI  Relinquished By:  Date/Time:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Received for CHEMTEX By:  Date/Time:  Date/Time:  Date/Time:			_											
Relinquished By:  FRANCIS A GOSTINI  Date/Time:  Date/Date/Date/Date/Date/Date/Date/Date/		ر. ا	E	mergenc	ev Rush		-			hr Rush_	7-14 d			Non-Regulatory
Relinquished By: Date/Time: Received for CHEMTEX By: Date/Time:	Relinquished By:		Da	ate/Time						4	D.YC	12	15/10	3PM
The second secon	Relinquished By:	$\lambda$ $_{\lambda}$	D	ate/Time	)is -		`						1 - 11	S: 10 pr

NOTICE / DISCLAIMER: Client has asked Chemtex to perform the analyses listed above, on the samples described herein. Any analytical results, opinions or interpretations which may be provided to Client are based upon the information and material supplied by Client, to whose exclusive and confidential use a report will be made. No person or entity other than Client may rely on any such report. Any such reliance will be unjustified. Any person, other than Client, that reads or relies on any such report, does so at his or her own risk. Chemtex makes no warranty or representation, express or implied, of any type, and expressly disclaims same. Any report provided by Chemtex shall not be reproduced, in whole or in part, without the written approval of Chemtex. In no event shall Chemtex be responsible for any damage greater than the amount that it received that approval of Chemtex. for performing some or all of the analyses listed above.



# City of Houston Bureau of Air Quality Control Canister Sampling Data Sheet and Chain-of-Custody



Sample ID:					Canister #	166	2	
	C	anister Cle	aning Inf	orm	ation (Labora	tory Personnel O	nly)	
Canister Cle	eaning Oper	ation	Pressure			Initials /	Date	
Canister Cle	eaned and E	vacuated			in H	g		
Media Blan	k Evacuatio	n			in H	g		
	G1:	d A	broig Dog	ast	Information	n (DAOC Inspect	instan C	)_t_)
G · D				uesi		n (BAQC Invest		
Canister Re						essure (Upor		
Pre-Samplin	ig Pressure:	-30		do n		nister for san		rcle Pass / Fail
Start Time:		PM E		uo II		M Elapsed		
Post-Sampli			in Hg		<u> </u>	,,,		
Potential So					tential Sourc	e (s) (Compa	ny's)	Address (es):
	Shel		ĺ			.,,,,		• • •
Sample Col	lection Addi	ress:				cal (s) (If Kn		
Soul)	east	CK-3	1	127	.4015			7.0
GPS Coordi	nates:	r8]N 9	15.11951	V <sup>v</sup> i	eather Condition	Jons:	15:	A mph
Sample Coll	ected By: 7	Rin		Sar	nple Date:	3/	25	110
Phone Num	ber:			E-r	nail:			
Site Descrip			ients:	Λ				
	100	PPb C	evel	10	Scomp	Some c	on	from do.
Analysis M	ethod Requ	ested (Circ	cle) VOC'	s by	TO-15 / C	ther Describ	e:	
						oile Lab Personne		and the second s
Canister	Field Press		Pressure		fference in	Test Resu		Initials / Date
Leak Test	(in Hg)		in Hg)		Pressure	(Circle)		
Final	, <u>, , , , , , , , , , , , , , , , , , </u>					Pass / Fail /	NA	,
	Coniet	r Dranara	tion Info	maí	ion (BAOC M	obile Lab Personi	nel Only	1)
Canister Pre			ution 1	ша		tion 2		als / Date:
Pre-Dilution				Hg		in Hg		
Post-Dilutio		$\nu$	5.0	psi		psi		.1
Dilution Fac		#1 3	<del>,</del>	1	#2			
Laboratory	Comments							
			Chair	ı of	Custody			
Relino	quished by:	(Signature/	Date)		Rec	eived by: (Si	gnatu	re/Date)
Gr	Y. Qin	3/31/1	0 8:4	0	Francis a	gostini 3	3/3//	10 8:40
<i>O</i> .	/	7						



3082 25th Street, Port Arthur, Texas 77642 • (409) 983-4575 FAX (409) 982-1522 5544 Leopard Street, Corpus Christi, Texas 78408 • (361) 299-9900 FAX (361) 299-1155 138 S. Cities Service Hwy., Sulphur, Louisiana 70663 • (337) 626-2121 FAX (337) 626-2126

Report Date: 04/07/10

Date Collected: 03/26/10

Sample Matrix: Gas

Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn:

Bureau of Air Quality Control

Phone: 832-393-5631; Fax: 713-640-4341 E-mail: Dan.hoyt@cityofhouston.net

Time Collected: 16:10-17:10 Mr. Dan Hoyt Collected By: Peter Chen Date Received: 04/05/10 Time Received: 5:10pm

CHEMTEX FILE #: P10040114

#### RESULTS OF ANALYSIS

PROJECT No: Canister 4570 PROJECT NAME: City of Houston DIAL PROJECT LOCATION: Shell Deer Park SAMPLE IDENTIFICATION: Downwind of ACU/BEU CHEMTEX #: P10040114

Analyte	Result	Reporting Limit,	Flag	
	(ppb, v)	(RL) (ppb, V)	riay	
Propylene	10.88	2.5		
Propane	20.70	2.5		
Freon 12	< 2.5	2.5		
Chloromethane	< 2.5	2.5		
Freon 114	< 2.5	2.5		
Isobutane	5.40	2.5		
Vinyl chloride	< 2.5	2.5		
1-Butene	< 2.5	2.5		
1,3-Butadiene	< 2.5	2.5		
Butane	< 2.5	2.5	•	
t-2-Butene	< 2.5	2.5		
Bromomethane	< 2.5	2.5		
c-2-Butene	< 2.5	2.5		
Chloroethane	< 2.5	2.5		
Acetone	6.82	2.5		
Isopentane	< 2.5	2.5		
Freon 11	< 2.5	2.5		
Isopropyl Alcohol	< 2.5	2.5		
1-Pentene	< 2.5	2.5		
Pentane	< 2.5	2.5		
Isoprene	< 2.5	2.5		
t-2-Pentene	< 2.5	2.5		
c-2-Pentene	< 2.5	2.5		
1,1-Dichloroethene	< 2.5	2.5		
2-Methyl-2-butene	< 2.5	2.5		
Methylene Chloride	< 2.5	2.5		
Carbon disulfide	< 2.5	2.5		
Freon 11	< 2.5	2.5		
2,2-Dimethylbutane	< 2.5	2.5		
Cis-1,2-Dichloroehtane	< 2.5	2.5		
1,1-Dichloroethane	< 2,5	2.5		
Cyclopentane	< 2.5	2.5		
2,3-Dimethylbutane	< 2.5	2.5		
MTBE	< 2.5	2.5		
2-Methylpentane	< 2.5	2.5		
2-Butanone	< 2.5	2.5		
3-Methylpentane	< 2.5	2.5		

MOTICE/DISCLAMEN: The analytical results, opinions or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. No person or entity other than the client may rely on this report. Any such reliance will be unjustified. Any person, other than the client, that reads this report does not his or her own risk. The analytical results, opinions and/or interpretations expressed herein represent the best judgment of Chemtex, best on the information and instructions received from the client. Chemtex makes no warranty or representation, express or implied, of any type, and expressly disclaims same. This report shall not be reproduced, in whole or in part, without the written approval of Chemtex. In me event shall Chemtex he responsible for any damage greater than the amount that it received for the analysis performed.



3082 25th Street, Port Arthur, Texas 77642 • (409) 983-4575 FAX (409) 982-1522 5544 Leopard Street, Corpus Christi, Texas 78408 • (361) 299-9900 FAX (361) 299-1155 138 S. Cities Service Hwy., Sulphur, Louisiana 70663 • (337) 626-2121 FAX (337) 626-2126

Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn: Mr. Dan Hoyt

Bureau of Air Quality Control

Phone: 832-393-5631; Fax: 713-640-4341

E-mail: Dan.hoyt@cityofhouston.net

Report Date: 04/07/10

Sample Matrix: Gas

Date Collected: 03/26/10 Time Collected: 16:10-17:10 Collected By: Peter Chen

Collected By: Peter Chen
Date Received: 04/05/10
Time Received: 5:10pm

CHEMTEX FILE #: P10040114

#### RESULTS OF ANALYSIS

PROJECT No: Canister 4570

PROJECT NAME: City of Houston DIAL

PROJECT LOCATION: Shell Deer Park
SAMPLE IDENTIFICATION: Downwind of ACU/BEU

CHEMTEX #: P10040114

Analyte	Result (ppb, v)	Reporting Limit, (RL) (ppb,V)	Flag
1-Hexene	< 2.5	2.5	
2-methyl-1-pentene	< 2.5	2.5	
trans-1,2-dichloroethene	< 2.5	2.5	
4-methyl-1-pentene	< 2.5	2.5	
Hexane	< 2.5	2.5	
Ethylacetate	< 2.5	2.5	
Chloroform	< 2.5	2.5	
TetrahydroFuran	< 2.5	2.5	
MethylCyclopentane	< 2.5	2.5	
2,4-Dimethylpentane	< 2.5	2.5	
1,1,1-Trichloroethane	< 2.5	2.5	
Benzene	4.22	2.5	
Carbontetrachloride	< 2.5	2.5	
Cyclohexane	< 2.5	2.5	
2-Methyl Hexane	< 2.5	2.5	
2,3-Dimethylpentene	< 2.5	2.5	
3-Methylhexane	< 2.5	2.5	
1,2-Dichloropropane	< 2.5	2.5	
Bromodichloromethane	< 2.5	2.5	- · · · · ·
Trichloroethylene	< 2.5	2.5	
Isooctane	< 2.5	2.5	
Heptane	< 2.5	2.5	
1,3-Dichloro-1propene	< 2.5	2.5	
cis-1,3-Dichloropropene	< 2.5	2.5	
MIBK	< 2.5	2.5	
Methylcyclohexane	< 2.5	2.5	
trans-1,3-dichloropropane	< 2.5	2.5	
1,1,2-trichloroethane	< 2.5	2.5	
2,3,4-Trimethyl pentane	< 2.5	2.5	
Toluene	< 2.5	2.5	
2-methylheptane	< 2.5	2.5	
2-Hexanone	< 2.5	2.5	
Dibromochloromethane	< 2.5	2.5	
3-Methylheptane	< 2.5	2.5	
1,2-Dibromoethane	< 2.5	2.5	
Octane	< 2.5	2.5	
Tetrachloroetylene	< 2.5	2.5	

MOTICE/DISCLAIMER: The analytical results, opinions or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. Mo person or entity other than the client may rely on this report. Any such relience will be unjustified, any person, other than the client, that reads this report does so at his or her own risk. The analytical results, opinions and/or interpretations empressed herein represent the best judgment of Chemtex, based on the information and instructions received from the client. Chemtex makes no warranty or representation, express or implied, of any type, and expressly disclaims same. This report shall not be reproduced, in whole or in part, without the written approval of Chemtex. In no event shall Chemtex be responsible for any damage greater than the amount that it received for the analysis performed.



3082 25th Street, Port Arthur, Texas 77642 • (409) 983-4575 FAX (409) 982-1522 5544 Leopard Street, Corpus Christi, Texas 78408 • (361) 299-9900 FAX (361) 299-1155 138 S. Cities Service Hwy., Sulphur, Louisiana 70663 • (337) 626-2121 FAX (337) 626-2126

Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn: Mr. Dan Hoyt

Bureau of Air Quality Control

Phone: 832-393-5631; Fax: 713-640-4341

E-mail: <u>Dan.hoyt@cityofhouston</u>.net

Report Date: 04/07/10

Sample Matrix: Gas

Date Collected: 03/26/10 Time Collected: 16:10-17:10 Collected By: Peter Chen Date Received: 04/05/10

Time Received: 5:10pm CHEMTEX FILE #: P10040114

## RESULTS OF ANALYSIS

PROJECT No: Canister 4570

PROJECT NAME: City of Houston DIAL PROJECT LOCATION: Shell Deer Park

SAMPLE IDENTIFICATION: Downwind of ACU/BEU

CHEMTEX #: P10040114

Analyte	Result	Reporting	
	(ppb, v)	Limit,	Flag
		(RL) (ppb, V)	
Chlorobenzene	< 2.5	2.5	
Ethylbenzene	< 2.5	2.5	
m,p-Xylene	< 2.5	2.5	
Bromoform	< 2.5	2.5	
Styrene	< 2.5	2.5	
1,1,2,2-tetrachloroethane	< 2.5	2,5	
o-xylene	< 2.5	2.5	
Nonane	< 2.5	2.5	
Isopropylbenzene	< 2.5	2.5	
Propylbenzene	< 2.5	2.5	
m-Ethyltoluene	< 2.5	2.5	
p-Ethyltoluene	< 2.5	2.5	
1,3,5-trimethylbenzene	< 2.5	2.5	
o-Ethyltoluene	< 2.5	2.5	
1,2,4-trimethylbenzene	< 2.5	2.5	
Benzylchloride	< 2.5	2.5	
1,3-Dichlorobenzene	< 2.5	2.5	
Decane	< 2.5	2.5	
1,4-Dichlorobenzene	< 2.5	2.5	
1,2,3-Trimethylbenzene	< 2.5	2.5	
1,2-Dichlorobenzene	< 2.5	2.5	
m-Diethylbenzene	< 2.5	2.5	
p-Diethylbenzene	< 2.5	2.5	
Undecane	< 2.5	2.5	
1,2,4-Trichlorobenzene	< 2.5	2.5	
Dodecane	< 2.5	2.5	
Hexachlor1,3-butadiene	< 2.5	2.5	

NOTICE/DISCLAIMER: The analytical results, opinions or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. No person or entity other than the client may rely on this report. Any such reliance will be unjustified. Any person, other than the client, that reads this report does so at his or her own risk. The analytical results, opinions and/or interpretations expressed herein represent the best judgment of Chemtex, herein referent in the client. Chemtex makes no warranty or representation, express or implied, of any type, and expressly disclaims same. This report shall not be reproduced, in whole or in part, without the written approval of Chemtex. In no event shall Chemtex be responsible for any damage greater than the amount that it received for the analysis performed.



Report Date: 04/07/10

Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn: Mr. Dan Hoyt

Bureau of Air Quality Control

Phone: 832-393-5631; Fax: 713-640-4341

E-mail: Dan.hoyt@cityofhouston.net CHEMTEX FILE #: P10040114

## QA/QC LABORATORY CONTROL SAMPLE (LCS) RECOVERIES QC BATCH ID: AT040510

Analyte	True value (ppb,v)	Obtained Value (ppb,v)	% Rec	Flag
Propylene	10.00	13.68	137	
Propane	10.00	12.24	122	
Isobutane	10.00	11.93	119	
1-Butene	10.00	12.61	126	
Butane	10.00	12.48	125	
t-2-Butene	10.00	12.70	127	
c-2-Butene	10.00	12.45	125	
Isopentane	10.00	10.79	108	
1-Pentene	10.00	11.50	115	
Pentane	10.00	12.07	121	
Isoprene	10.00	12.07	121	
t-2-Pentene	10.00	12.04	120	
c-2-Pentene	10.00	11.89	119	
2-Methyl-2-butene	10.00	11.89	119	
2,2-Dimethyl butane	10.00	11.74	117	
Cyclopentane	10.00	11.08	111	
3-Methylpentane	10.00	9.47	95	
1-Hexene	10.00	9.23	92	
2-methyl-1-pentene	10.00	9.02	90	
Hexane	10.00	10.19	102	
MethylCyclopentane	10.00	11.37	114	
2,4-Dimethylpentane	10.00	11.55	116	
Benzene	10.00	10.93	109	
Cyclohexane	10.00	11.06	111	
2-Methyl Hexane	10.00	8.68	87	
2,3-Dimethylpentane	10.00	8.76	88	
3-Methylhexane	10.00	8.69	87	
Heptane	10.00	8.11	81	
Methylcyclohexane	10.00	8.25	83	
2,3,4-Trimethyl pentane	10.00	8.46	85	
Toluene	10.00	7.96	80	
2-methylheptane	10.00	8.51	85	
3-Methylheptane	10.00	8.39	84	
Octane	10.00	7.70	77	

MOTICE/DISCLAIMER: The analytical results, opinions or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. No person or entity other than the client may rely on this report. Any such relience will be unjustified. Any person, other than the client, that reads this report does so at his or her own risk. The analytical results, opinions and/or interpretations expressed herein represent the best judgment of Chemtex, based on the information and instructions received from the client. Chemtex makes no warranty or representation, express or implied, of any type, and expressly disclaims same. This report shall not be reproduced, in whole or in part, without the written approval of Chemtex. In no event shall Chemtex be responsible for any damage greater than the amount that it received for the analysis performed.



Report Date: 04/07/10

Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn: Mr. Dan Hoyt

Bureau of Air Quality Control

Phone: 832-393-5631; Fax: 713-640-4341

E-mail: Dan.hoyt@cityofhouston.net CHEMTEX FILE #: P10040114

## QA/QC LABORATORY CONTROL SAMPLE (LCS) RECOVERIES QC BATCH ID: AT040510

Analyte	True value (ppb,v)	Obtained Value (ppb,v)	% Rec	Flag
Ethylbenzene	10.00	7.94	79	
m,p-Xylene	20.00	15.86	159	
Styrene	10.00	8.36	84	
o-xylene	10.00	8.22	82	
Nonane	10.00	8.60	86	
Isopropylbenzene	10.00	8.82	88	
Propylbenzene	10.00	8.54	85	
m-Ethyltoluene	10.00	8.57	86	
p-Ethyltoluene	20.00	17.50	175	
1,3,5-trimethylbenzene	10.00	8.76	88	
o-Ethyltoluene	10.00	8.75	88	
1,2,4-Trimethylbenzene	10.00	8.74	87	
Decane	10.00	8.66	87	
1,2,3-Trimethylbenzene	10.00	8.38	84	
m-Diethylbenzene	10.00	8.24	82	
p-Diethylbenzene	10.00	8.08	81	
Undecane	10.00	7.73	77	



Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn: Mr. Dan Hoyt

Bureau of Air Quality Control

Phone: 832-393-5631; Fax: 713-640-4341

E-mail: Dan.hoyt@cityofhouston.net

Report Date: 04/07/10

CHEMTEX FILE #: P10040114

## **FLAGS**

RL: Reporting Limit

J: Target analyte is between the MDL and RL values.

L: Target analyte recovered below the recovery limit.

H: Target analyte recovered above the recovery limit.

## METHOD REFERENCES/ANALYSIS DATES & ANALYSTS

Analytes VOAs Method

EPA Method TO-15

Date Analyzed/Analyst

04/05/10 KBR

Dr. C. N. Reddy, Ph.D., CIH, ASP Director

amd/kml\*/CNR

## **CHEMTEX**

## CHAIN OF CUSTODY RECORD INDUSTRIAL HYGIENE

ANALYTICAL SERVICES REQUEST

Ploops III

Environmental & Industrial Hygiene Services 3082 25th Street, Port Arthur, TX 77642 Phone: (409) 983-4575, Fax: (409) 982-1522

-mail: chemiexpaiaisbegiobai.nei				7411 5 1 51	Dlad					Phone: 832-393-5631		
Client: City of Houston	Address: 7411 Park Place Blvd.									Fax: 713-640-4341		
Attn: Mr. Dan Hoyt,	Houston, TX 77087											
Bureau of Air Qua	lity Cont	rol								E-mail: Dan.Hoyt@cityofhouston.net		
(if different from above)		P. O. #:		Project No.:	Pro	ject Name:		<u> </u>	Project Lo	ocation:		
BILLING CONTACT/ADD	RESS:			CANISTER	0	ity of i	4005101	NDIAL	~	II DET P DADI		
<b>2.22.10 2.1</b>		457	$\wedge$		-			• •	3HE1	LL DEER PARK		
		1 <b>4</b> 0 t	$\mathcal{O}$	4570								
	_	<u> </u>				Sample	Date	Sampling	Sampling			
OTTENTEN #		Com	mla Ida	antification		Media	Collected	Time	Volume	Requested Parameters		
CHEMTEX #		San	ample Identification			,		(min)	(lit)	•		
				<u> </u>				·	· · · · -	Charles of Eastern Atlanta		
11520	<i>σ</i> .	1	ΩE	noslot o		la vicara	2/4/10	16:10-17:10	62	DILUTION FACTOR: 2.808		
4570	DOW	9 M ( )	OF	ACU/BEU		CANISTER	5/26/10	(60 MiN)	00			
	<u> </u>		_			<u> </u>			1			
						<del></del>	<del></del> .	-				
	· · · · · ·											
			_	· · ·		<del> </del>	<del></del>	<del>-</del> -				
							•	ļ				
							<u> </u>		·			
										,		
	ļ							,				
					_							
1	1							İ	ľ			
			_	<u> </u>		-	<u>-</u>	<del> </del>	**			
		<del>-</del>										
	<del> </del>		··			<del>  -</del>	-		<del></del>			
	] _							<u>L </u>				
Sample(s) Collected By:	<u>-</u>					cted Turnar				Regulatory Non-Regulatory		
PETER CHEN		Er	nerger	ncy Rush 2-4 hr F	tush_	24 hr R	ush48	hr Rush	7-14 da			
Relinquished By:			ate/Tin			Received B	y:	_ <del>_</del>		Date/Time:		
FRANCIS AGOSTI	vi.			5/10 301		·		\ A	. A.	1117110 304		
		To.	ate/Tip	3 / LO	7	Received for	r CHEMTE	X By:	Ye	Date/Time:		
Relinquished By:	Λ	A 14.	استها	In Silan	<b>7</b>	1			/ A	11/5/10 6:100		
D. Wei and de C. Marie	بيبلكح	Cornus Christi	Tay.	408- (361) 299-9900 amail che	ntexcc/a	l Sbeglobal.net an	d 138 S. Cities Se	ervice Hwy., Suli	ensieles John	70663; (334) 626-2121 e-mail: chemtexlc@strelobal.net		
Facilities are also available: 5544 Let	ոհանում Ֆուգեր	Corpus Curisti,	14192 (0,	100, (201) 277-7700 C-MAIN CHC					•	and the state of t		

NOTICE / DISCLAIMER: Client has asked Chemitex to perform the analyses listed above, on the samples described herein. Any analytical results, opinions or interpretations which may be provided to Client are based upon the information and material supplied by Client, for whose exclusive and confidential use a report will be made. No person or entity other than Client may rely on any such report. Any such reliance will be unjustified. Any person, other than Client, that reads or relies on any such report, does so at his or her own risk. Chemitex makes no warranty or exclusive and confidential use a report will be made. No person or entity other than Client may rely on any such report. Any such report, any such report, does so at his or her own risk. Chemitex makes no warranty or exclusive and confidential use a report will be made. No person or entity other than Client may rely on any such report, does so at his or her own risk. Chemitex makes no warranty or exclusive and confidential use a report will be made. No person or entity other than Client may rely on any such report. Any such reliance will be unjustified. Any person, other than Client, that reads or relies on any such report, does so at his or her own risk. Chemitex makes no warranty or exclusive and confidential use a report will be made. No person or entity other than Client may rely on any such report. Any such reliance will be unjustified. Any person, other than Client may rely on any such report, does so at his or her own risk. Chemitex to perform the analyses listed above.



# City of Houston Bureau of Air Quality Control Canister Sampling Data Sheet and Chain-of-Custody



	·							
Sample ID:	•				Canister #:	4570	)	
	C	anister Cle	eaning Inf	orm	ation (Laborat	ory Personnel Or	ılv)	
Canister Cle			Pressure			Initials /		
Canister Cle	eaned and E	vacuated	¥		in Hg			
Media Blan	k Evacuatio	n			in Hg			
	Samplin	σ and Ans	lysis Rea	nest	Information	(RAOC Invest	gator O	nly)
Canister Re					Canister Pro			
Pre-Samplin								cle Pass Fail
				do no	ot use the car	ister for san	pling	)
	16:10							: 60 min
Post-Sampli					· · · · · · · · · · · · · · · · · · ·			
Potential So	ource (s) (Co	mpany's N	Vame):	Pot	tential Source	e (s) (Compa	ny's) .	Address (es):
Shell	Chemi	'cel Co	) ,			-		
Sample Col	lection Add Aculsせ		100 Ocimu	All	eged Chemio	al (s) (If Kn	own)	
GPS Coordi	nates:			We	ather Condit	ions:	1	. 10 . 211
	st N, 9				WD:	ESE	WS	: 4.2 MPH
Sample Col				Sar	npic Date.	7/26/10		
Phone Num				E-n	nail: 🔑	to chen	@ Ci	ty of douston, no
Site Descrip	otion and F	ield Comn	nents:		•			
Analysis M	ethod Requ	ested (Cir	cle) VOC'	s by	TO-15 / C	ther Describ	e:	
<del>y</del>	Canis	ter Leak T	est Infor	mati	on (BAQC Mob	ile Lab Personne	el Only)	
Canister	Field Press		Pressure		fference in	Test Resu		Initials / Date
Leak Test	(in Hg)	) (	in Hg)		Pressure (C		)	
Final						Pass / Fail /	NA	
<del></del>	Canisto	er Prepara	tion Info	mat	ion (BAQC Mo	bile Lab Person	iel Only	)
Canister Pre			lution 1		Dilut			ıls / Date:
Pre-Dilution	Pressure	-8	in	Hg	Al.	in Hg		
	110000110				1			
Post-Dilutio		14	1,0	psi		psi		
Post-Dilutio Dilution Fac	n Pressure	#1 3	1,0 <del>348</del> 6	psi	#2			
	n Pressure etors	#1	1,0 <del>348</del> 6					
Dilution Fac	n Pressure etors	#1	1 <b>.0</b> <del>1486</del> 808 P	psi ( 3/ <sub>3</sub>				
Dilution Fac Laboratory	n Pressure etors	#1 3.	1.0 <del>3 4.8 6</del> 80 8	psi ( 3/ <sub>3</sub>	Custody		ignatu	re/Date)
Dilution Fac Laboratory	n Pressure tors Comments	#1 3.	7,0 3 4 8 6 8 0 8	psi c 3/s	Custody Rec	psi		
Dilution Face Laboratory  Reline	n Pressure ctors Comments quished by:	#1 3.	7,0 3 4 8 6 8 0 8	psi c 3/ <sub>3</sub>	Custody Rec	psi eived by: (S		
Dilution Face Laboratory  Reline	n Pressure ctors Comments quished by:	#1 3.	7,0 3 4 8 6 8 0 8	psi c 3/ <sub>3</sub>	Custody Rec	psi eived by: (S		



Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn:

Mr. Dan Hoyt

Bureau of Air Quality Control Phone: 832-393-5631; Fax: 713-640-4341

E-mail: Dan.hoyt@cityofhouston.net

Report Date: 04/07/10 Sample Matrix: Gas

Date Collected: 03/23/10 Time Collected: 3:45-3:560 Collected By: Isaac Desous Date Received: 03/25/10 Time Received: 4:00pm

CHEMTEX FILE #: P10030776

## RESULTS OF ANALYSIS

PROJECT No: Canister 1353
PROJECT NAME: DIAL

PROJECT LOCATION: Shell Deer Park

<u>~400 Feet North of TOL913</u> <u>SAMPLE IDENTIFICATION: TOL-913</u> <u>CHEMTEX #: P10030776</u>

Analyte	Result (ppb, v)	Reporting Limit, (RL) (ppb, V)	Flag	
Propylene	15.43	2.5		
Propane	8.58	2.5		
Freon 12	< 2.5	2.5		
Chloromethane	< 2.5	2.5		
Freon 114	< 2.5	2.5		
Isobutane	< 2.5	2.5		
Vinyl chloride	< 2.5	2.5		
1-Butene	5.89	2.5		
1,3-Butadiene	7.33	2.5		
Butane	5.42	2.5		
t-2-Butene	3.28	2.5		
Bromomethane	< 2.5	2.5		
c-2-Butene	3.11	2.5		
Chloroethane	< 2.5	2.5		
Acetone	< 2.5	2.5		
Isopentane	42.53	2.5		
Freon 11	< 2.5	2.5		
Isopropyl Alcohol	< 2.5	2.5		
1-Pentene	11.25	2.5		
Pentane	17.13	2.5		
Isoprene	21.86	2.5		
t-2-Pentene	7.20	2.5		
c-2-Pentene	3.26	2.5		
1,1-Dichloroethene	< 2.5	2.5		
2-Methyl-2-butene	3.26	2.5		
Methylene Chloride	< 2.5	2.5		
Carbon disulfide	2.99	2.5		
Freon 11	< 2.5	2.5		
2,2-Dimethylbutane	< 2.5	2.5		
Cis-1,2-Dichloroehtane	< 2.5	2.5		
1,1-Dichloroethane	< 2.5	2.5		
Cyclopentane	< 2.5	2.5		
2,3-Dimethylbutane	< 2.5	2.5		
MTBE	< 2.5	2.5		
2-Methylpentane	2.50	2.5		
2-Butanone	< 2.5	2.5		
3-Methylpentane	< 2.5	2.5		

HOTICE/DISCLAIMER: The analytical results, opinions or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. No person or entity other than the client may rely on this report. Any such reliance will be unjustified, any person, other than the client, that reads this report does so at his or her own risk. The analytical results, opinions and/or interpretations expressed herein represent the best judgment of Chemtex, based on the information and instructions received from the client. Chemtex makes no warranty or representation, express or implied, of any type, and expressly disclaims same. This report shall not be reproduced, in whole or in part, without the written approval of Chemtex. In no event shall Chemtex be responsible for any damage greater than the amount that it received for the analysis performed.



Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn: Mr. Dan Hoyt

Bureau of Air Quality Control

Phone: 832-393-5631; Fax: 713-640-4341

E-mail: Dan.hoyt@cityofhouston.net

Report Date: 04/07/10

Sample Matrix: Gas

Date Collected: 03/23/10 Time Collected: 3:45-3:560 Collected By: Isaac Desous Date Received: 03/25/10

Time Received: 4:00pm

CHEMTEX FILE #: P10030776

## RESULTS OF ANALYSIS

PROJECT No: Canister 1353
PROJECT NAME: DIAL

PROJECT LOCATION: Shell Deer Park

<u>~400 Feet North of TOL913</u> <u>SAMPLE IDENTIFICATION: TOL-913</u> <u>CHEMTEX #: P10030776</u>

Analyte	Result (ppb, v)	Reporting Limit,	Flag
	122 / 7	(RL) (ppb, V)	_
1-Hexene	< 2.5	2.5	
2-methyl-1-pentene	< 2.5	2.5	
trans-1,2-dichloroethene	< 2.5	2.5	
4-methyl-1-pentene	< 2.5	2.5	
Hexane	4.51	2.5	
Ethylacetate	< 2.5	2.5	
Chloroform	< 2.5	2.5	
TetrahydroFuran	< 2.5	2.5	
MethylCyclopentane	< 2.5	2.5	
2,4-Dimethylpentane	< 2.5	2.5	
1,1,1-Trichloroethane	< 2.5	2.5	
Benzene	53.38	2.5	
Carbontetrachloride	< 2.5	2.5	
Cyclohexane	< 2.5	2.5	
2-Methyl Hexane	< 2.5	2.5	
2,3-Dimethylpentene	< 2.5	2.5	
3-Methylhexane	< 2.5	2.5	
1,2-Dichloropropane	< 2.5	2.5	
Bromodichloromethane	< 2.5	2.5	
Trichloroethylene	< 2.5	2.5	
Isooctane	< 2.5	2.5	
Heptane	< 2.5	2.5	
1,3-Dichloro-1propene	< 2.5	2.5	
cis-1,3-Dichloropropene	< 2.5	2.5	
MIBK	< 2.5	2.5	
Methylcyclohexane	< 2.5	2.5	
trans-1,3-dichloropropane	< 2.5	2.5	
1,1,2-trichloroethane	< 2.5	2.5	
2,3,4-Trimethyl pentane	< 2.5	2.5	
Toluene	7.49	2.5	
2-methylheptane	< 2.5	2.5	
2-Hexanone	< 2.5	2.5	
Dibromochloromethane	< 2.5	2.5	
3-Methylheptane	< 2.5	2.5	
1,2-Dibromoethane	< 2.5	2.5	
Octane	< 2.5	2.5	
Tetrachloroetylene	< 2.5	2.5	

MOTICE/DISCLAIMER: The analytical results, opinions or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. No person or entity other than the client may rely on this report. Any such reliance will be unjustified. Any person, other than the client, that reads this report does so at his or her own risk. The analytical results, opinions and/or interpretations expressed herein represent the best judgment of Chemtex, based on the information and instructions received from the client. Chemtex makes no warranty or representation, express or implied, of any type, and expressly disclains seas. This report shall not be reproduced, in whole or in part, without the written approval of Chemtex. In no event shall Chemtex be responsible for any damage greater than the amount that it received for the analysis performed.



3082 25th Street, Port Arthur, Texas 77642 • (409) 983-4575 FAX (409) 982-1522 5544 Leopard Street, Corpus Christi, Texas 78408 • (361) 299-9900 FAX (361) 299-1155 138 S. Cities Service Hwy., Sulphur, Louisiana 70663 • (337) 626-2121 FAX (337) 626-2126

Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn: Mr. Dan Hoyt

Bureau of Air Quality Control

Phone: 832-393-5631; Fax: 713-640-4341

E-mail: Dan.hoyt@cityofhouston.net

Report Date: 04/07/10

Sample Matrix: Gas

Date Collected: 03/23/10 Time Collected: 3:45-3:560 Collected By: Isaac Desous

Date Received: 03/25/10 Time Received: 4:00pm

CHEMTEX FILE #: P10030776

## RESULTS OF ANALYSIS

PROJECT No: Canister 1353

PROJECT NAME: DIAL

PROJECT LOCATION: Shell Deer Park

~400 Feet North of TOL913

SAMPLE IDENTIFICATION: TOL-913

CHEMTEX #: P10030776

Analyte	Result (ppb, v)	Reporting Limit,	Flag
	(922) 1)	(RL) (ppb, V)	
Chlorobenzene	< 2.5	2.5	
Ethylbenzene	< 2.5	2.5	
m,p-Xylene	< 2.5	2.5	
Bromoform	< 2.5	2.5	
Styrene	< 2.5	2.5	
1,1,2,2-tetrachloroethane	< 2.5	2.5	
o-xylene	< 2.5	2.5	
Nonane	< 2.5	2.5	
Isopropylbenzene	< 2.5	2.5	
Propylbenzene	< 2.5	2.5	
m-Ethyltoluene	< 2.5	2.5	
p-Ethyltoluene	< 2.5	2.5	
1,3,5-trimethylbenzene	< 2.5	2.5	
o-Ethyltoluene	< 2.5	2.5	
1,2,4-trimethylbenzene	< 2.5	2.5	
Benzylchloride	< 2.5	2.5	
1,3-Dichlorobenzene	< 2.5	2.5	
Decane	< 2.5	2.5	
1,4-Dichlorobenzene	< 2.5	2.5	
1,2,3-Trimethylbenzene	< 2.5	2.5	
1,2-Dichlorobenzene	< 2.5	2.5	
m-Diethylbenzene	< 2.5	2.5	
p-Diethylbenzene	< 2.5	2.5	
Undecane	< 2.5	2.5	
1,2,4-Trichlorobenzene	< 2.5	2.5	
Dodecane	< 2.5	2.5	
Hexachlor1,3-butadiene	< 2.5	2.5	

MOTICE/DISCLAIMER: The analytical results, opinions or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. No person or entity other than the client may rely on this report. Any such reliance will be unjustified. Any person, other than the client, that reads this report does so at his or her own risk. The analytical results, opinions and/or interpretations expressed herein represent the best judgment of Chemtax, based on the information and instructions received from the client. Chemtax makes no warranty or expresentation, express or implied, of any type, and expressly disclaims sums. This report shall not be reproduced, in whole or in part, without the written approval of Chemtax. In no event shall Chemtax be responsible for any damage greater than the amount that it received for the analysis performed.



Report Date: 04/07/10

Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn: Mr. Dan Hoyt

Bureau of Air Quality Control

Phone: 832-393-5631; Fax: 713-640-4341

CHEMTEX FILE #: P10030776 E-mail: Dan.hoyt@cityofhouston.net

## QA/QC LABORATORY CONTROL SAMPLE (LCS) RECOVERIES QC BATCH ID: AT032910

Analyte	True value (ppb,v)	Obtained Value (ppb,v)	% Rec	Flag
Propylene	10.00	9.90	99	
Propane	10.00	8.80	88	
Isobutane	10.00	10.00	100	
1-Butene	10.00	10.02	102	
Butane	10.00	10.00	100	
t-2-Butene	10.00	9.90	99	
c-2-Butene	10.00	10.02	102	
Isopentane	10.00	9.10	91	
1-Pentene	10.00	9.60	96	
Pentane	10.00	9.80	98	
Isoprene	10.00	9.60	96	
t-2-Pentene	10.00	9.80	98	
c-2-Pentene	10.00	9.70	97	
2-Methyl-2-butene	10.00	9.70	97	
2,2-Dimethyl butane	10.00	9.80	98	
Cyclopentane	10.00	8.10	81	
3-Methylpentane	10.00	7.70	77	
1-Hexene	10.00	8.90	89	
2-methyl-1-pentene	10.00	8.70	87	
Hexane	10.00	8.90	89	
MethylCyclopentane	10.00	9.00	90	
2,4-Dimethylpentane	10.00	9.70	97	
Benzene	10.00	8.60	86	
Cyclohexane	10.00	9.00	90	
2-Methyl Hexane	10.00	9.50	95	
2,3-Dimethylpentane	10.00	9.50	95	
3-Methylhexane	10.00	9.50	95	
Heptane	10.00	8.70	87	
Methylcyclohexane	10.00	8.60	86	
2,3,4-Trimethyl pentane	10.00	9.30	93	
Toluene	10.00	8.20	82	
2-methylheptane	10.00	9.10	91	
3-Methylheptane	10.00	9.30	93	
Octane	10.00	8.70	87	

MOTICE/DISCLAMENT: The analytical results, opinions or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. No person or entity other than the client may rely on this report. Any such reliance will be unjustified. Any person, other than the client, that reads this report does so at his or her own risk. The analytical results, opinions and/or interpretations expressed herein represent the best judgment of Chemtax, based on the information and instructions received from the client. Chemtax makes no warranty or representation, express or implied, of any type, and expressly disclaims same. This report shall not be reproduced, in whole or in part, without the written approval of Chemtax. In no event shall Chemtax be responsible for any damage greater than the amount that it received for the analysis performed.



Report Date: 04/07/10

Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn: Mr. Dan Hoyt

Bureau of Air Quality Control

Phone: 832-393-5631; Fax: 713-640-4341

E-mail: Dan.hoyt@cityofhouston.net CHEMTEX FILE #: P10030776

## QA/QC LABORATORY CONTROL SAMPLE (LCS) RECOVERIES QC BATCH ID: AT032910

Analyte	True value (ppb,v)	Obtained Value (ppb, v)	% Rec	Flag
Ethylbenzene	10.00	7.90	79	
m,p-Xylene	20.00	16.3	82	
Styrene	10.00	8.20	82	
o-xylene	10.00	8.20	82	
Nonane	10.00	8.90	89	
Isopropylbenzene	10.00	8.60	86	
Propylbenzene	10.00	8.20	82	
m-Ethyltoluene	10.00	8.10	81	
p-Ethyltoluene	20.00	16.30	82	
1,3,5-trimethylbenzene	10.00	8.30	83	
o-Ethyltoluene	10.00	8.20	82	
1,2,4-Trimethylbenzene	10.00	8.20	82	
Decane	10.00	· 8.40	84	
1,2,3-Trimethylbenzene	10.00	7.60	76	
m-Diethylbenzene	10.00	7.40	74	
p-Diethylbenzene	10.00	7.20	72	
Undecane	10.00	7.00	70	



Client: City of Houston

7411 Park Place Blvd. Houston, TX 77087

Attn: Mr. Dan Hoyt

Bureau of Air Quality Control

Phone: 832-393-5631; Fax: 713-640-4341

E-mail: Dan.hoyt@cityofhouston.net

Report Date: 04/07/10

CHEMTEX FILE #: P10030776

## **FLAGS**

RL: Reporting Limit

J: Target analyte is between the MDL and RL values.

L: Target analyte recovered below the recovery limit.

H: Target analyte recovered above the recovery limit.

## METHOD REFERENCES/ANALYSIS DATES & ANALYSTS

Analytes

Method

EPA Method TO-15

Date Analyzed/Analyst

03/29/10 KBR

Dr. C. N. Reddy, Ph.D., CIH, ASP Director

amd/kml\*/CNR

MOTICE/DISCLAIMER: The analytical results, opinions or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. No person or entity other than the client may rely on this report. Any such reliance will be unjustified, any person, other than the client, that reads this report does so at his or her own risk. The analytical results, opinions and/or interpretations empressed herein represent the best judgment of Chemtex, based on the information and instructions received from the client. Chemtex makes no warranty or representation, express or implied, of any type, and expressly disclaims same. This report shall not be reproduced, in whole or in part, without the written approval of Chemtex. In no event shall Chemtex be responsible for any damage greater than the amount that it received for the analysis performed.

## **CHEMTEX**

## CHAIN OF CUSTODY RECORD INDUSTRIAL HYGIENE

ANALYTICAL SERVICES REQUEST

Environmental & Industrial Hygiene Services 3082 25th Street, Port Arthur, TX 77642

Phone: (409) 983-4575, Fax: (409) 982-1522
E-mail: chemtexpa@sbcglobal.net

Client: City of Houston	City of Houston Address: 7411 Park Place Blvd.						Phone: 832-393-5631		
Attn: Mr. Dan Hoyt,							Fax: 713-640-4341		
Bureau of Air Quality Contro					E-mail: Dan.Hoyt@cityofhouston.net				
	P. O. #:	Project No.:	Project Name:	·		Project L	ocation:		
BILLING CONTACT/ADDRESS:		CANISTER	_			SHELL	DEER PARK		
		/353	DIAL				FEET NORTH OF TOL913		
CHEMTEX#	Sample Identification			Date Collected	Sampling Time (min)	Sampling Volume (lit)	Requested Parameters		
1353 TOL	913		CANISTER	3/23/10	3:45 PM- 3:56 PM (11 KIN)	GL	P10030776.		
					<u></u>				
	<u> </u>	<u> </u>		*	<u> </u>		<u> </u>		
	<u></u>								
					<u> </u>				
	<u></u> ,								
							<u> </u>		
Sample(s) Collected By:			Expected Turnar				☐ Regulatory ☐ Non-Regulatory		
ISAAC DESOUZA Emergency Rush 2-4 hr Rush			ish 24 hr F		hr Rush	7-14 da			
Relinquished By:  ISAAC DESOUSA	Date	Time: 3/23/10 5:00 P	Peceived B	y: FRAN	cis Ago	ostini	Date/Time: 3/23/10 5-00 PM		
Relinquished By:	Date	7/Time: 2/2 10 4:007</td <td>Received to</td> <td>or CHEMTE</td> <td></td> <td>1.1</td> <td>Date/Time: 3/25//0 11:0000</td>	Received to	or CHEMTE		1.1	Date/Time: 3/25//0 11:0000		
Facilities are also available: 5544 Leopard Street, Co	rpus Christi, Tex	ras 78408; (361) 299-9900 e-mail: chem	texcc@sbcglobal.net an	d 138 S. Cities S	ervice Hwy., Sul	bur, Louisian	a 70663; (337) 626-2121 e-mail: <u>chemtexlc@sbcglobal.net</u>		

NOTICE / DISCLAIMER: Client has asked Chemtex to perform the analyses listed above, on the samples described herein. Any analytical results, opinions or interpretations which may be provided to Client are based upon the information and material supplied by Client, for whose exclusive and confidential use a report will be made. No person or entity other than Client may rely on any such report. Any such relience will be unjustified. Any person, other than Client, that reads or relies on any such report, does so at his or her own risk. Chemtex makes no warranty or representation, express or implied, of any type, and expressly disclaims same. Any report provided by Chemtex shall not be reproduced, in whole or in part, without the written approval of Chemtex. In no event shall Chemtex be responsible for any damage greater than the amount that it received for performing some or all of the analyses listed above.



# City of Houston Bureau of Air Quality Control Canister Sampling Data Sheet and Chain-of-Custody



Sample ID:	1353				Canister #:	/353		
	Ca	nister Cle	aning Inf	orma	ation (Laborato	ory Personnel Or	ıly)	
Canister Cle	Canister Cleaning Operation Pressure Initials / Date							
Canister Cle					in Hg			
Media Blank	Evacuation	l			in Hg			
					Information			
Canister Rec	eived: (Initi	als / Date)	)ID/3-23.	-10	Canister Pre	essure (Upor	Rece	ipt): -30 in Hg
Pre-Samplin (* If the diff				do no	Pre-Sampl ot use the can			cle) Pass / Fail
Start Time:			End Time:			Elapsed		
Post-Sampli								
Potential So	urce (s) (Co	mpany's N	Vame):	Pot	ential Source	(s) (Compa	ıny's) .	Address (es):
SHELL D	EER PAR	2K	:	TO	06913			
Sample Coll				B.	eged Chemic	cal (s) (If Kn	own)	
	TOL 913	(DOWN)	UINU)		NZENE	:		
GPS Coordi	nates:			_	ather Condit		4 147/A	ID DIATERTY ON
Sample Coll	ected By: T	SAAC DE	CAUDA	PARTLY CLOUDY, SOUTH WIND DIRECTION  Sample Date: 3-23-10				
Phone Numl							@ city	OFHOUSTON.NET
	S 5 MIN BEHIN	D DIAL CLO	ICK (START-	TIME		TIME: 4:01P	nT.P.I.	913. TIME DREADINGS 0-805 ppb
	Canic	ter Leak T	Cest Infor	mati	on (BAQC Mob	sile I ah Personn	el Only)	
Canister	Field Press		Pressure	_	fference in	Test Resi		Initials / Date
Leak Test	(in Hg)		in Hg)	ŀ			)	
Final		-				Pass / Fail	/ NA	
	Caniste	r Prenara	ation Info	rmat	ion (BAQC Mo	bile Lab Person	nel Only	v)
Canister Pre			lution 1			tion 2		als / Date:
Pre-Dilution	Pressure			psia		psia		
Post-Dilutio	n Pressure			psia		psia		
Dilution Fac	tors	#1			#2			
Laboratory	Comments	:						
			Chai	n of	Custody			
Reline	quished by:	(Signature	/Date)			ceived by: (S		
ISAAC DE					FRANCIS	AGOSTINI		
FRANCIS	AGOSTINI	13-25-	10	$\dashv$	And	· 13-2	25-1	<b></b>
			· · · · · · · · · · · · · · · · · · ·		<u> </u>			

## CHAIN OF CUSTODY DIAL

CANISTER NUMBER 1393 1353 3/23/10 (5+min) Dim & Sooth 4:02 pm/4:07 pm DATE 3/23/10 3:45 pm/ 3:50 pm START TIME 4:14 pm/4:19 pm 3:56 pm/4:01pm END TIME -28 psi -30 psi INITIAL PRESSURE -2 p8i. -1 psi FINAL PRESSURE GL TYPE OF CANISTER 61 integrated 15 min TYPE OF SAMPLE 11 sporth of tank told downwind of 913 LOCATION 11 POSSIBLE SOURCE TOL 913 11 DISTANCE FROM SOURCE ~ 130 yards (400 feet) 11 cloudy WEATHER (( WIND DIRECTION South no -805 pp 5 (higher readings) 0-490 pp 6 PID READING · 50-100 ppb bemene TAREN BY I DeSouza

SUPPENDERED TO

BARB/ACT

	TESTAMERICA - AUSTIN 14050 SUMMIT DR. SUITE A-100 AUSTIN, TX 78728	0.55 pp
	Canister #   555	EST
	Field ID 4 of 2	<b>∵</b> ⊢
4550	Site SHELL	
	Project D/A /_	
	Sampler Initials 20	<b>∑</b> N
	Date 3 1 23 1/0 Time 3:45/ 3:56	T R
K OF A	Comments ~ 400' TOL 913 PM	SSTAMERI LEADER IN ENVIRONMENTAL
	TO THE NORTH WINDS FROM	S AD
-	THE 500/H	. <b>₩</b>
	Sample Matrix: Ambient Cr Source	
	Routine Duplicate Blank Dother Void	



Dilution Factor Canister Blanked 5011/1 1353 (3/23/10) Initials 3-23-10 Initial Final Pressure Pressure Date ī FIELD -30 LAB